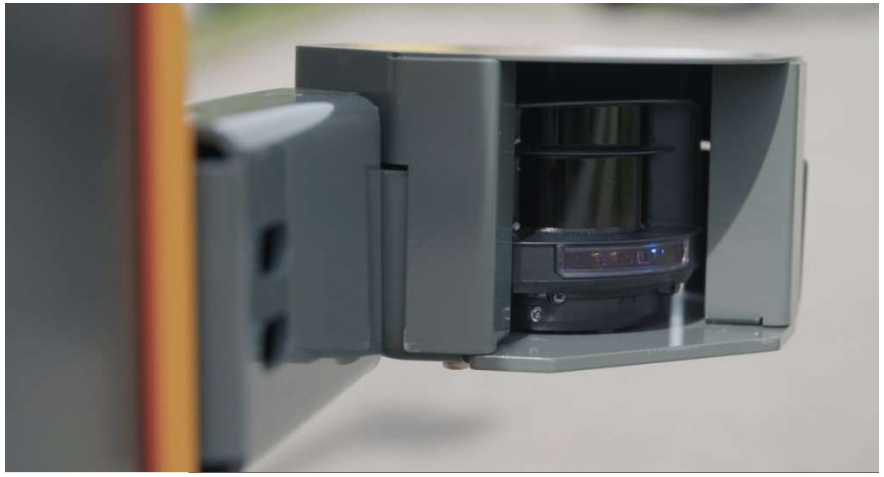
AUTOMATIC SYSTEMS

BEA LASER SCANNER

BEA LZR-H100

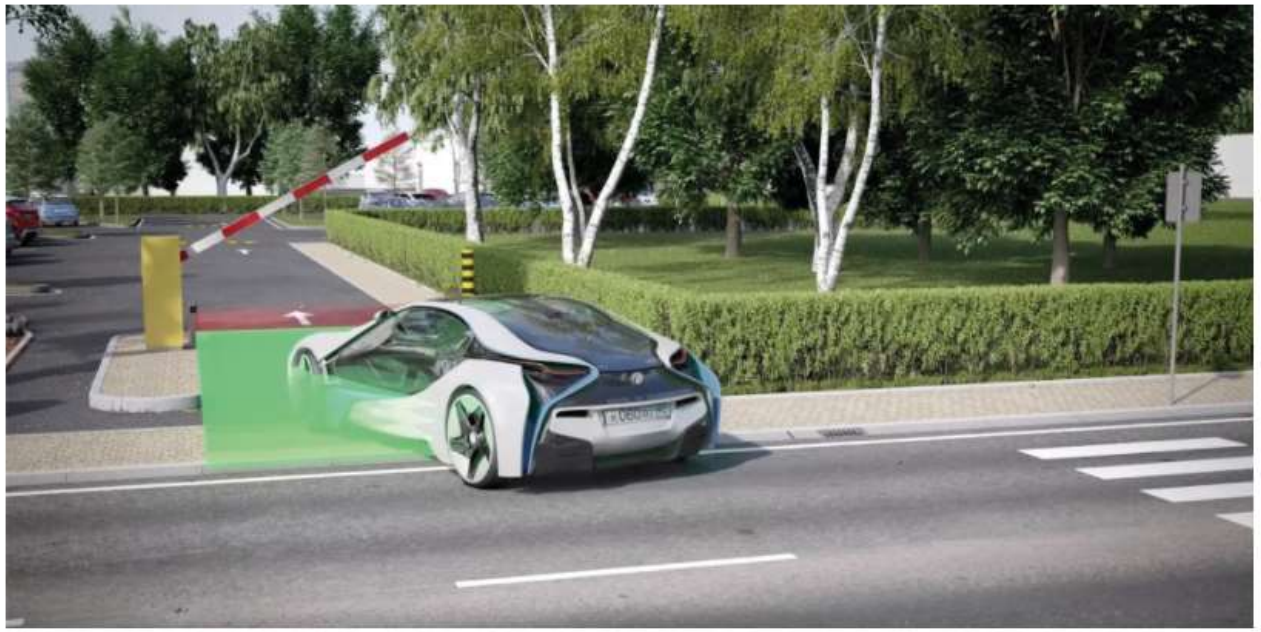
OPENING & SAFETY SENSOR FOR BARRIERS



The LZR®-H100 offers a real alternative to induction loops: time gain during installation, detection of all types of vehicles and greater adaptability. This laser sensor for rising barriers is used to open, secure and/or detect a presence. It offers great flexibility in defining the width and depth of the detection zones (max detection field of 9.9 m x 9.9 m).

BEA LZR-H100

FEATURES



Comfortable opening

All types of vehicles are detected in the opening field: passenger cars, electrical vehicles, vehicles made of composite materials, trucks with trailers...You can also define the vehicle's trajectory for targeted opening.

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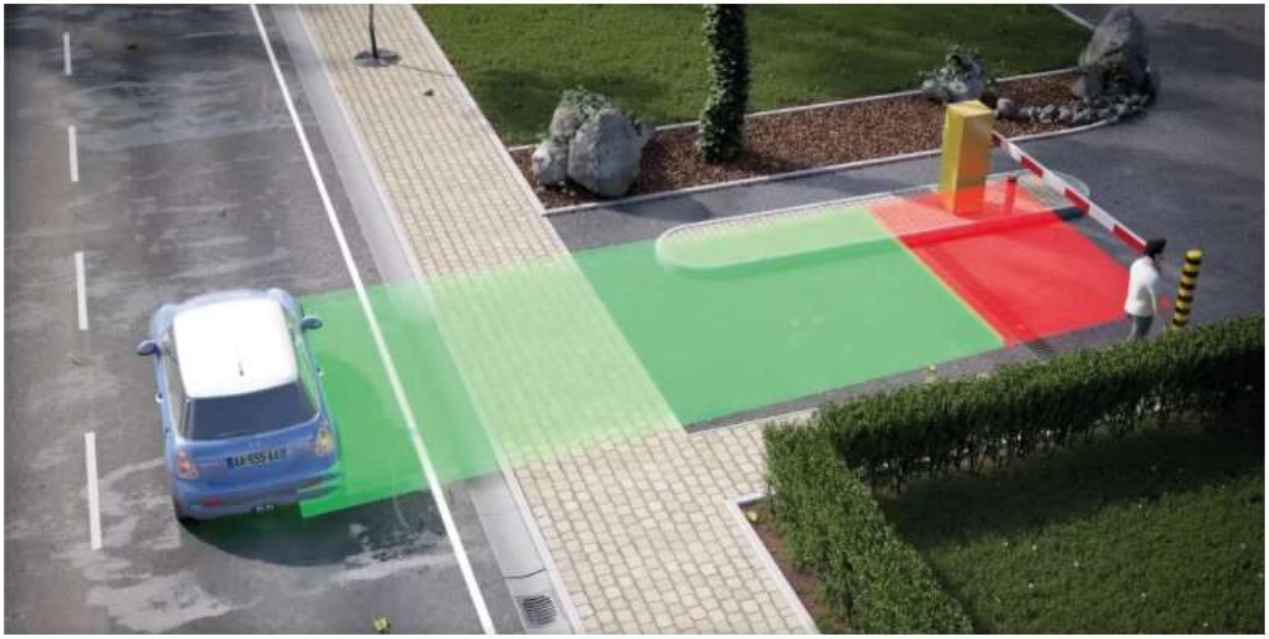
FEATURES



Pedestrian & cross-traffic filter

The barrier only opens when a vehicle is approaching. Pedestrians and parallell traffic in the opening field are screened.

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FEATURES

Safety of its users

The LZR®-H100 protects vehicles and people that are present in the safety field from contact with the boom (installation with reference point).

BEA LZR-H100

FEATURES

Easy installation

Installation of the product without any impact on the surrounding ground and unrestricted and easy definition of the detection fields.

MAIN APPLICATIONS

Road quality too bad for inductions loops

Unfavorable road surface (e. g. concrete slabs with a lot of expansion joints)

Possible influence of high voltage or transmitter poles, etc.

-Lane may not be cut for static reason (e.g., basement ceiling)

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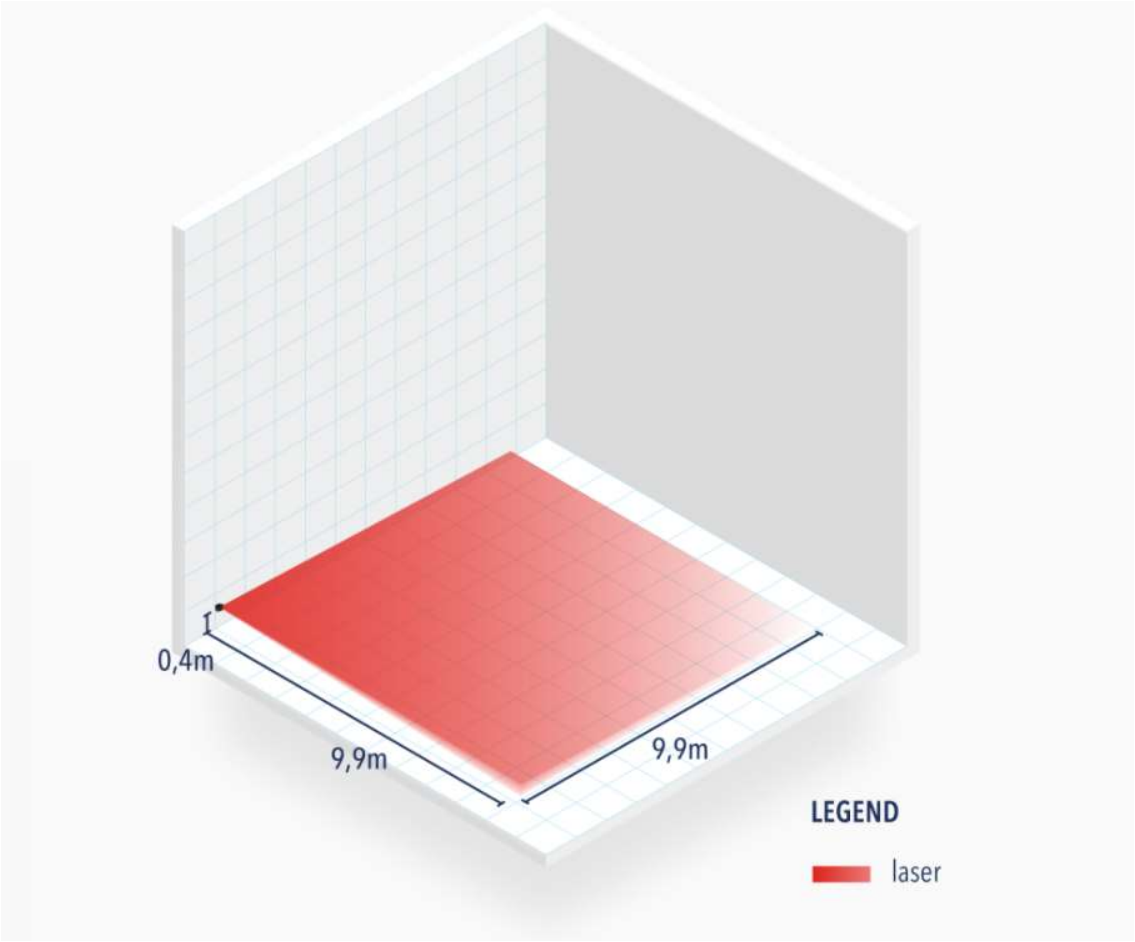
TECHNICAL SPECIFICATIONS

DETECTION AREA



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TECHNICAL SPECIFICATIONS

TECHNOLOGY:	laser scanner, time-of-flight measurement (4 laser curtains)
DETECTION MODE:	motion and presence
MAX. DETECTION RANGE:	9.9 m x 9.9 m
REMISSION FACTOR:	> 2 %
ANGULAR RESOLUTION:	0,3516 °
EMISSION CHARACTERISTICS	**IR laser:** wavelength 905 nm; max. output pulse power 75 W (CLASS 1) **Visible laser:** wavelength 650 nm; max. output CW power 3 mW (CLASS 2)

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TECHNICAL SPECIFICATIONS

SUPPLY VOLTAGE:	10-35 V DC @ sensor side
POWER CONSUMPTION:	< 5 W
PEAK CURRENT AT POWER-ON:	1.8 A (max. 80 ms @ 35 V)
CABLE LENGTH:	5 m (standard), max.: 10 m
RESPONSE TIME **MOTION DETECTION:** **PRESENCE DETECTION:**	typ. 200 ms (adjustable) typ. 20 ms; max. 80 ms
OUTPUT: **MAX. SWITCHING VOLTAGE:** **MAX. SWITCHING CURRENT:** **SWITCHING TIME:** **OUTPUT RESISTANCE:** **VOLTAGE DROP ON OUTPUT:** **LEAKAGE CURRENT:**	2 electronic relays (galvanic isolated - polarity free) 35 V DC / 24 V AC 80 mA (resistive) tON=5 ms; tOFF=5 ms typ 30 Ω < 0.7 V @ 20 mA < 10 µA
INPUT: **MAX. CONTACT VOLTAGE:** **VOLTAGE THRESHOLD:**	1 optocoupler (galvanic isolated - polarity free) 30 V DC (over-voltage protected) Log. H: >8 V DC; Log. L: <3 V DC

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TECHNICAL SPECIFICATIONS

LED-SIGNAL:	1 blue LED: power-on status 1 orange LED: error status 2 bi-coloured LEDs: detection/output status (green: no detection; red: detection)
DIMENSIONS:	125 mm (D) x 93 mm (W) x 70 mm (H) (with mounting bracket + 14 mm)
MATERIAL:	PC/ASA
COLOUR:	black
MOUNTING ANGLES ON BRACKET:	-45 °, 0 °, 45 °
ROTATION ANGLES ON BRACKET:	-5 ° to +5 ° (lockable)
TILT ANGLES ON BRACKET:	-3 ° to +3 °

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TECHNICAL SPECIFICATIONS

PROTECTION DEGREE:	IP65
TEMPERATURE RANGE:	-30 °C to +60 °C if powered; -10 °C to +60 °C unpowered
HUMIDITY:	0-95 % non-condensing
VIBRATIONS:	< 2 G
POLLUTION ON FRONT SCREENS:	max. 30 %; homogenous
NORM CONFORMITY:	This product conforms to all applicable European Union legislation. Please refer to the Declaration of Conformity for further information.

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DECLARATION OF CONFORMITY

The object of the declaration described above is in conformity with the relevant Union harmonisation legislation:

2014/30/EU	EMC Directive
2014/35/EU	LVD Directive
2006/42/EC	Machinery Directive
2011/65/EU	RoHS 2 Directive

The following harmonised standards and technical specifications have been applied:

EN 61000-6-2:2005 +AC:2005	Electromagnetic compatibility (EMC) - Part 6-2: Generic standards - Immunity for industrial environments
EN 61000-6-3:2007 +A1:2011+AC:2012	Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments
EN 60950-1:2006 +A11:2009+A12:2011+A1:2010 +A2:2013+AC:2011	Information technology equipment - Safety - Part 1: General requirements
EN 60825-1:2014	Safety of laser products - Part 1: Equipment classification and requirements
EN ISO 13849-1:2015	Safety of machinery - Safety-related parts of control systems - Part 1: General principles for design (Performance level "d" CAT 2)
EN 62061:2005 +A1:2013+A2:2015+AC:2010	Safety of machinery - Functional safety of safety-related electrical, electronic and programmable electronic control systems (SIL2)
EN 61496-1:2013	Safety of machinery - Electro-sensitive protective equipment - Part 1: General requirements and tests (ESPE Type2)
EN 12978:2003 +A1:2009	Industrial, commercial and garage doors and gates - Safety devices for power operated doors and gates - Requirements and test methods
EN 50581:2012	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Additional standards or normative documents:

EN 12453:2017	Industrial, commercial and garage doors and gates - Safety in use of power operated doors - Requirements and test methods (Device E)

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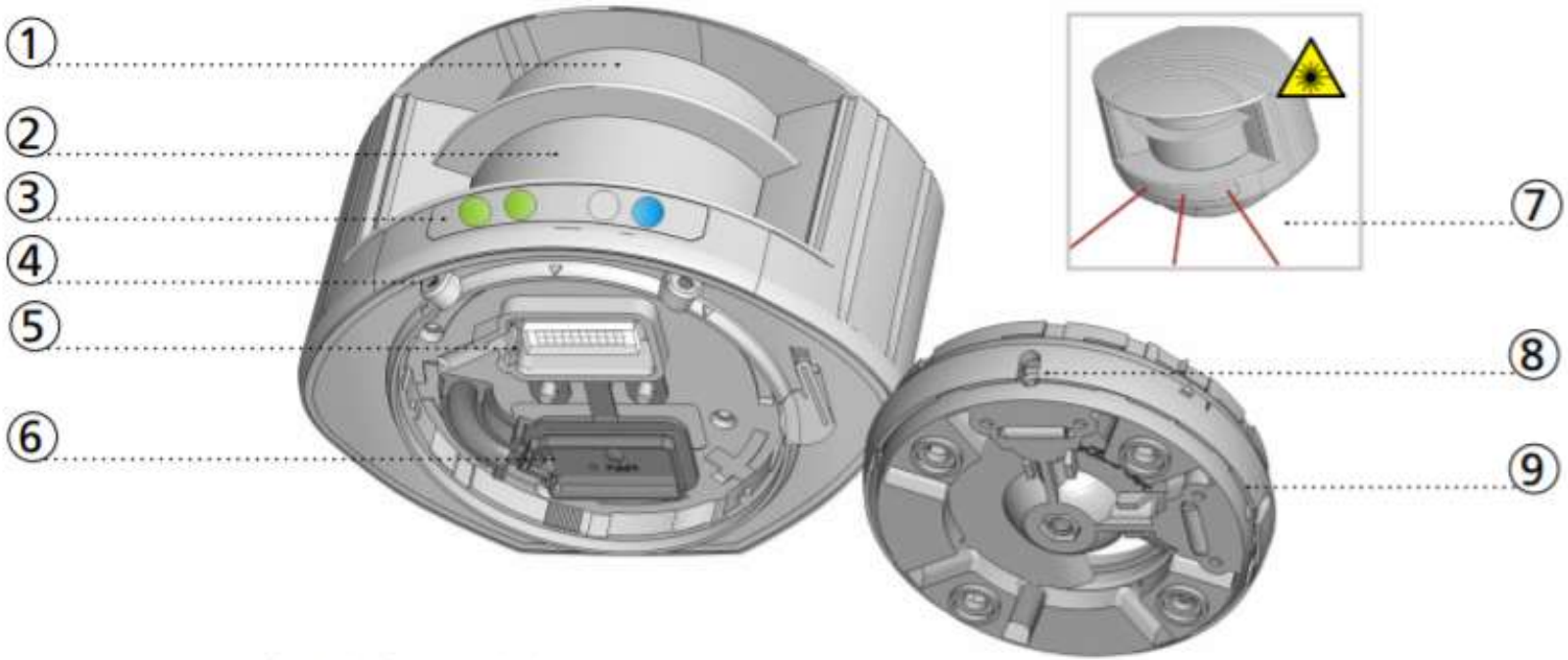
DESCRIPTION



1. laser window - emission
2. laser window - reception
3. LED-signal
4. screws for position lock
5. connector
6. protection cover

7. visible laser beams
8. notch for tilt angle adjustment
9. adjustable bracket

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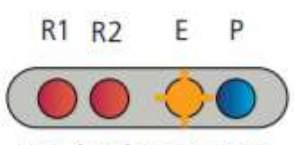
LED SIGNALS



LED-signal at power-on

R1: Relay 1 - detection in opening field
R2: Relay 2 - detection in safety field

R1 / R2	detection	no detection
E: Error status	error	no error
P: Power status	power	no power

LED is on | LED flashes | LED flashes quickly | LED is off

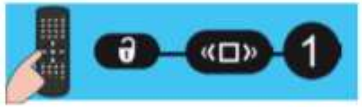
All 4 LEDs can be switched off and on again by remote control.
This can be useful in cases where the sensor should not draw any attention.

SYMBOLS

Caution! Laser radiation

Important

Good to know



Important remote control sequence

Possible remote control adjustments

Factory values

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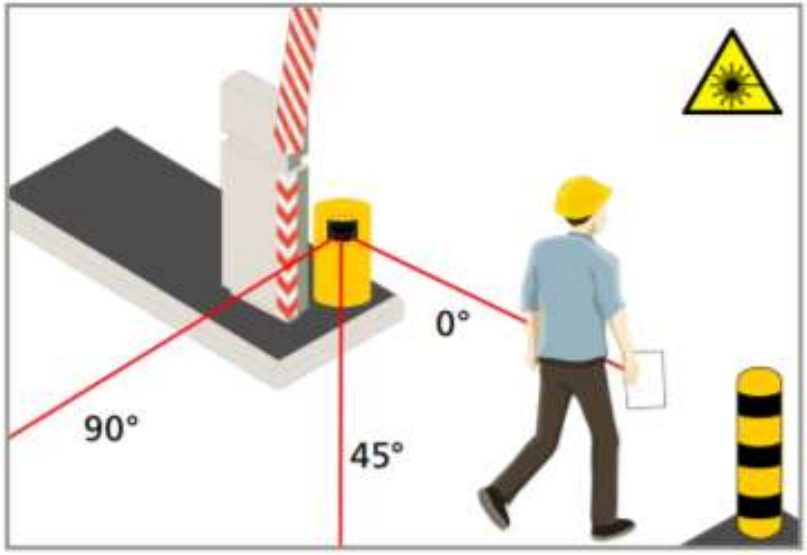
BASIC PRINCIPLES

VISIBLE RED LASER BEAMS



The sensor and detection field position are very important for the good functioning of the barrier.

In order to position the sensor correctly, it is possible to use a visual aid. 3 visible red laser beams can be activated by remote control:

The visible laser beams are also used to determine the reference of the sensor in order to ensure the safety of the barrier.

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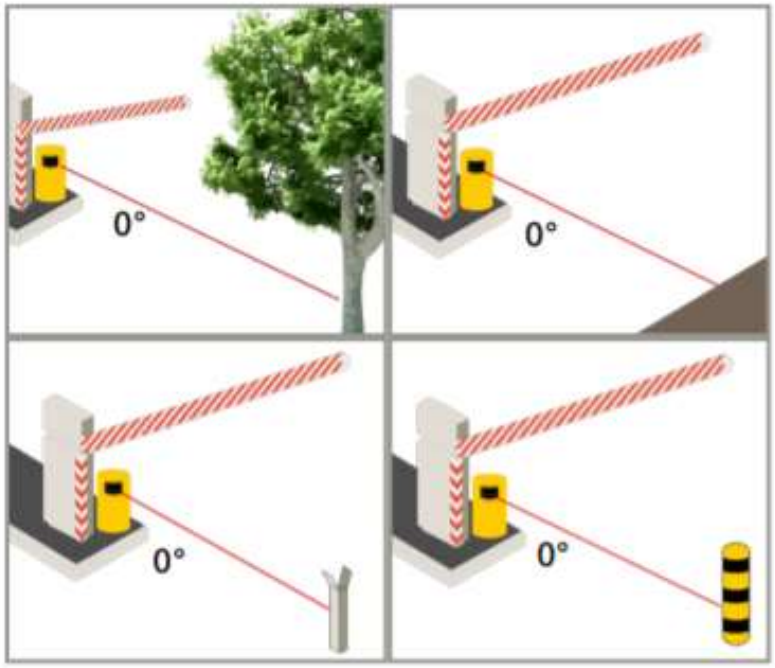
BASIC PRINCIPLES



The sensor has to learn a reference when the safety field is the only protection against contact between the vehicle and the boom.

The reference can be adjusted on any type of object already present on site (wall, tree, barrier boom support) or on a post.

Always make sure the object on which the reference is adjusted:

- is positioned in the continuity of the 0° laser beam
- is positioned min. at the end of the boom or farther away than the end of the boom
- has a surface of +/- 10 cm (min. 5 cm)
- is firlmy fixed to the floor and not subject to vibrations

Use reflective sticker when the distance between sensor and reference is higher than 5 m.

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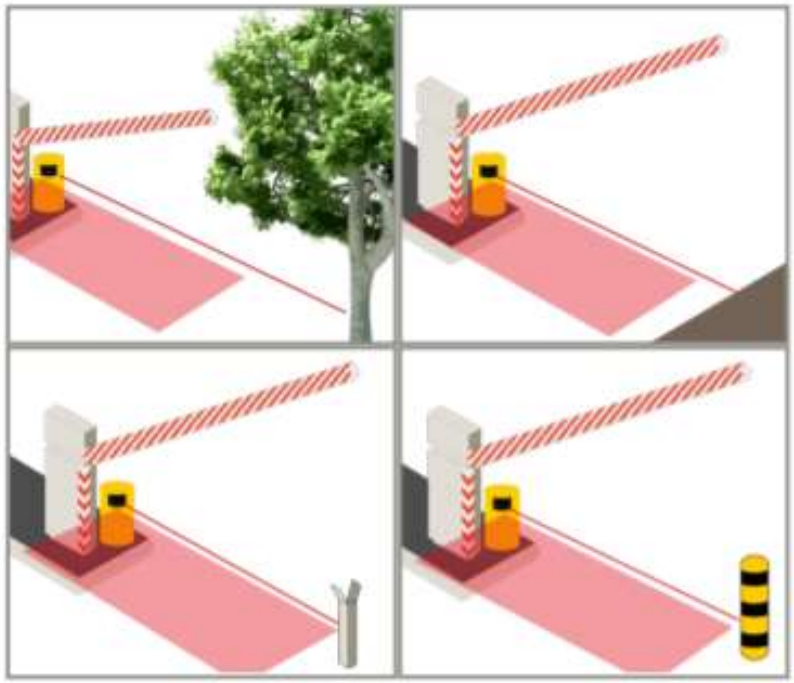
BASIC PRINCIPLES



If the safety field is the only protection against contact with the boom, the safety field of the sensor must be situated right under the boom.

This is only possible when the sensor is positioned correctly and the reference has been learned.

If the reference is situated at the end of the boom, the detection field width is the same as the reference distance. If the reference is farther away, you need to adjust the detection field width to the width of the boom.

In order to maximise safety in case of mixed traffic (vehicles and trucks), an additional vertical detection zone is recommended (LZR-I100).

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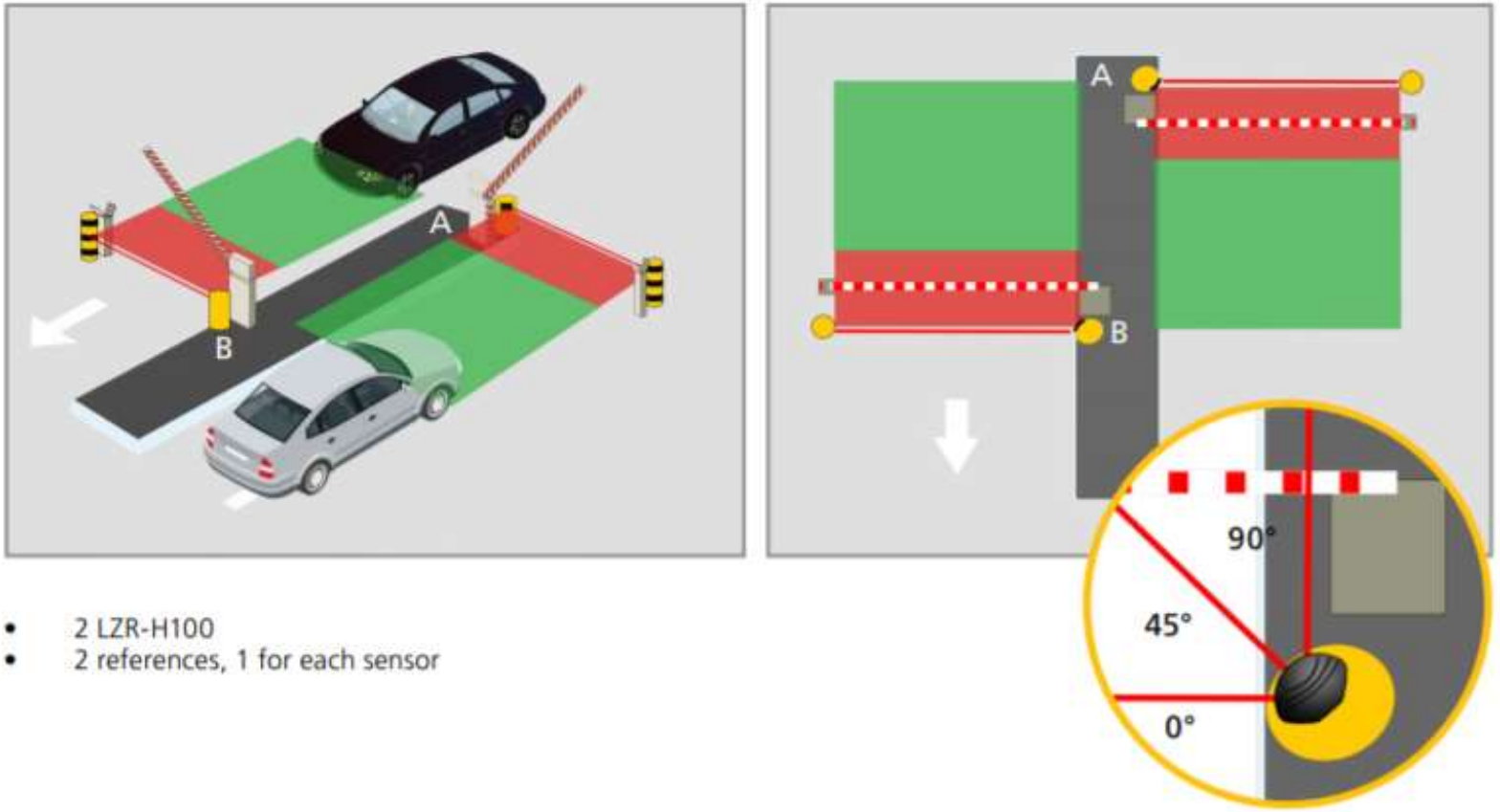
APPLICATION REQUIREMENTS

DOUBLE ACCESS LANE



- 2 LZR-H100
- 2 references, 1 for each sensor

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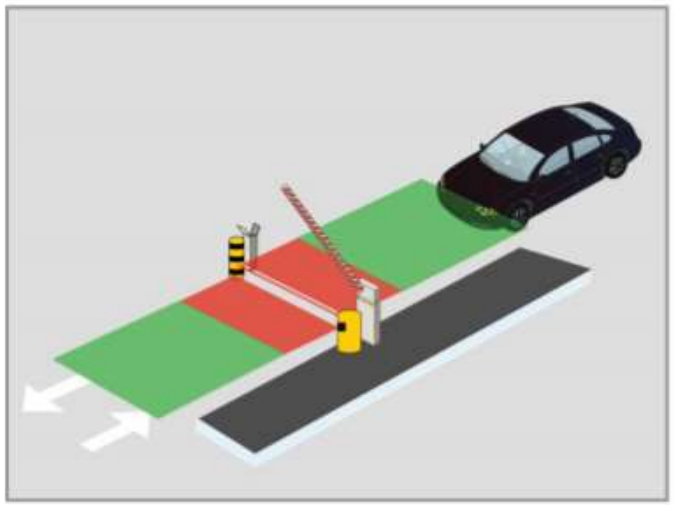
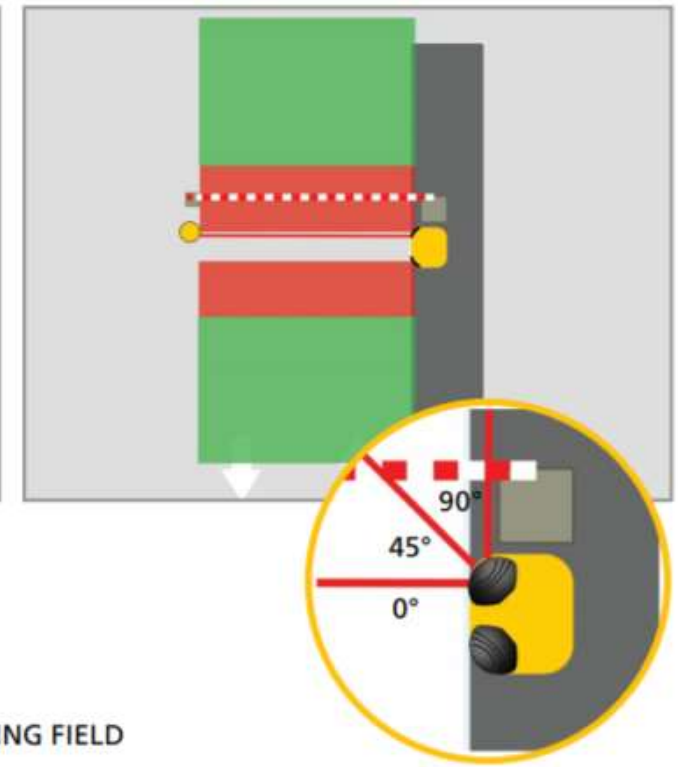
APPLICATION REQUIREMENTS

SINGLE ACCESS LANE





- 2 LZR-H100
- 1 reference

SAFETY FIELD

OPENING FIELD

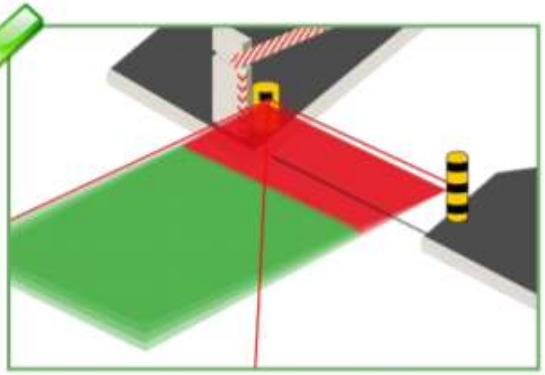
⚠ To optimize detection for high vehicles like trucks, add a vertical safety field just before the barrier (LZR-I100).

BEA LZR-H100

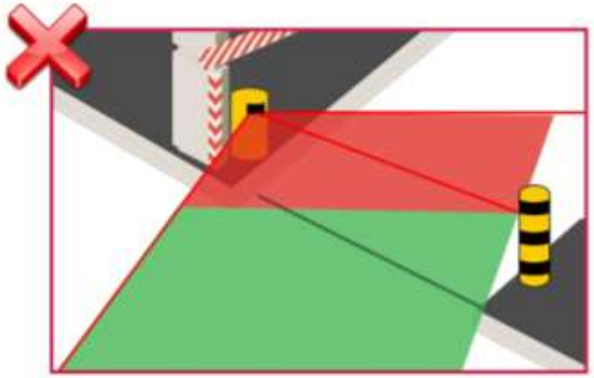
COMPLIANCE WITH EN 12453 TYPE E

Install the sensor at a mounting height of 35 - 45 cm. If the barrier is only used by trucks, the mouting height can be increased.

If the reference beam is too low or too high, contact with the boom cannot be excluded.



Make sure to place the detection field parallel to the boom.



Do not position the detection field as shown.

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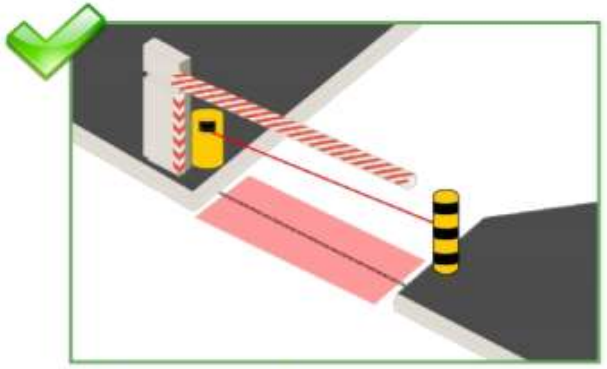
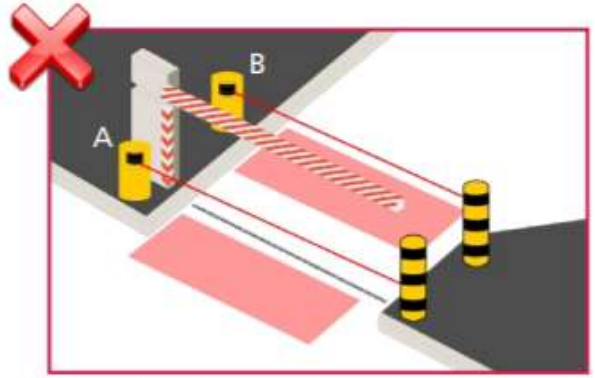
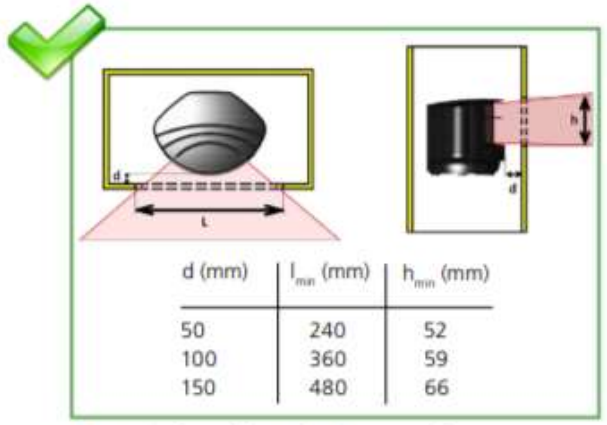
COMPLIANCE WITH EN 12453 TYPE E



When using the safety, place the sensor just behind the barrier. This way the safety field protects the area around the boom.



When using the safety, do not place the sensor before the barrier (A) or more than 40 cm after the boom (B). The area around the boom is not safe.



d (mm)	l_{min} (mm)	h_{min} (mm)
50	240	52
100	360	59
150	480	66

Keep the front face of the sensor free!

Do not cover the front face of the sensor with glass or plastic.